

Investigating climate driven shifts in *Staphylococcus aureus* and MRSA for water resource and land management solutions

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Project Summary

Staphylococcus aureus and methicillin-resistant *S. aureus* (MRSA) abundance are being quantified in association with rainfall and river discharge in Hilo Bay, Hawai'i Island, in an effort to model how these pathogens vary in response to weather patterns. The abundance of these bacteria is also being determined in soils, sands, rivers, cesspools, and storm water within the Hilo watershed, to gain information on sources of these pathogens to recreational waters. Additionally, MRSA infection rates at the Hilo Medical Center are being compared with the frequency of rainfall events, to assess if community members are more at risk of these infections during the wet season. These data will provide foundational information on how *S. aureus* and MRSA abundance will respond to a changing climate, and help guide solutions to manage and mitigate the transport of such pathogens to coastal waters.



Fig. 1. Tracy Wiegner and Louise Economy take water chemistry measurements at Hilo One (Bayfront) sampling location.

Fig. 2. Louise Economy surveys Hilo One (Bayfront) sampling location from out on water.

